

Release notes for ENDF/B Development n-099_Es_255
evaluation



April 26, 2017

- psyche Warnings:

1. Non-threshold reaction with Q value differing from PSYCHE's expectations
FILE 3 / SECTION 102 / THE CALCULATED Q 3.64149E+08 DISSAGREES WITH THE GIVEN Q 4.97419E+06 (0): Iffy Q

```
FILE 3
SECTION 102
THE CALCULATED Q 3.64149E+08 DISSAGREES WITH THE GIVEN Q 4.97419E+06
```

- fudge-4.0 Warnings:

1. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.91%
```

2. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (3.448903e-09) is too small
```

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 4 (n + Es255): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 4 (n + Es255): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 7 (n[multiplicity:'3'] + Es253 + gamma): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (9.643008e-09) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 10 (n + (Es255_e1 -> Es255 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.345945e-09) is too small

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 11 (n + (Es255_e2 -> Es255 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (9.357957e-11) is too small

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 12 (n + (Es255_c -> Es255 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 13 (Es256 + gamma): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 13 (Es256 + gamma): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 14 (n + Es255 [angular distribution]): / Form 'eval': (Error # 1): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 15 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 16 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 17 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 18 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

- **fudge-4.0 Errors:**

1. ENDF format insists that all outgoing fission neutrons, delayed or otherwise, have spectra. For delayed neutrons this is tough.

Reading ENDF file: ../n-099_Es_255.endf (Error # 0): No delayed n dist

```
WARNING: More than one delayed fission neutron decay time but no MF = 5 data
```

2. Energy range of data set does not match cross section range
reaction label 3: n + (Es255_c ->Es255 + gamma) / Product: Es255_c / Decay product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110872.0 -> 20000000.0)
```

3. Energy range of data set does not match cross section range
reaction label 3: n + (Es255_c -> Es255 + gamma) / Product: Es255_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110872.0 -> 20000000.0)
 WARNING: Domain doesn't match the cross section domain: (170000.0 -> 20000000.0) vs (110872.0 -> 20000000.0)

4. Energy range of data set does not match cross section range
reaction label 3: n + (Es255_c -> Es255 + gamma) / Product: Es255_c / Decay product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (170000.0 -> 20000000.0) vs (110872.0 -> 20000000.0)

5. Calculated and tabulated Q values disagree.
reaction label 4: n[multiplicity:'2'] + Es254 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5904192.122924805 eV vs -5974430. eV!

6. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

7. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

8. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

9. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

10. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

11. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

12. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
13. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
14. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
15. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
16. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
17. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
18. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
19. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
20. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)

21. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
22. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
23. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_i / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
24. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_j / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
25. Energy range of data set does not match cross section range
reaction label 4: n[multiplicity:'2'] + Es254 + gamma / Product: gamma_j / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5998050.0 -> 20000000.0)
26. Calculated and tabulated Q values disagree.
reaction label 5: n[multiplicity:'3'] + Es253 + gamma (Error # 0): Q mismatch
- WARNING: Calculated and tabulated Q-values disagree: -10997221.28009033 eV vs -1.10675e7 eV!
27. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)
28. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)
29. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

30. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

31. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

32. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

33. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

34. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (11500000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

35. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

36. Energy range of data set does not match cross section range
reaction label 5: n[multiplicity:'3'] + Es253 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12000000.0 -> 20000000.0) vs (11111200.0 -> 20000000.0)

37. Calculated and tabulated Q values disagree.
reaction label 6: n[multiplicity:'4'] + Es252 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -17348828.37246704 eV vs -1.74191e7 eV!

38. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18000000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

39. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18000000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

40. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

41. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

42. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18000000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

43. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18000000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

44. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

45. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

46. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

47. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

48. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18000000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

49. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18000000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

50. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

51. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

52. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

53. Energy range of data set does not match cross section range
reaction label 6: n[multiplicity:'4'] + Es252 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (18500000.0 -> 20000000.0) vs (17487900.0 -> 20000000.0)

54. Calculated and tabulated Q values disagree.
reaction label 8: Es256 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 5044451.491363525 eV vs 4974190. eV!

55. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 5: n + (Es255_c ->Es255 + gamma) total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 23.64%

56. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 6: n[multiplicity:'2'] + Es254 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 93.55%

57. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 7: $n[multiplicity:3] + Es253 + \text{gamma total gamma multiplicity}$
 (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 99.99%
58. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 8: $n[multiplicity:4] + Es252 + \text{gamma total gamma multiplicity}$
 (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 57.72%
59. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 0: $/reactionSuite/fissionComponents/fissionComponent[@label='0']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 238554706460.2038 eV vs 2.213e8 eV!
60. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 1: $/reactionSuite/fissionComponents/fissionComponent[@label='1']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 238554706460.2038 eV vs 2.213e8 eV!
61. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 2: $/reactionSuite/fissionComponents/fissionComponent[@label='2']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 238554706460.2038 eV vs 2.213e8 eV!
62. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 3: $/reactionSuite/fissionComponents/fissionComponent[@label='3']$
 (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 238554706460.2038 eV vs 2.213e8 eV!
63. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.
 $Section\ 14\ (n + Es255\ [angular\ distribution]): /Form\ 'eval': /LegendreLValue\ L=1\ vs\ 1$
 (Error # 0): *Bad evs*
- WARNING: 10 negative eigenvalues! Worst case = -1.022054e-04
- njoy2012 Warnings:
 1. Evaluation has no resonance parameters given
 $unresr...calculation\ of\ unresolved\ resonance\ cross\ sections\ (0): No\ RR$

```
---message from unresr---mat 9916 has no resonance parameters
copy as is to nout
```
 2. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
 $heatr...prompt\ kerma\ (0): HEATR/hinit\ (3)$

```
---message from hinit---mt19 has no spectrum  
mt18 spectrum will be used.
```

3. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
heatr...prompt kerma (1): HEATR/hinit (3)

```
---message from hinit---mt458 is missing for this mat
```

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

```
---message from hinit---mf6, mt 16 does not give recoil za= 99254  
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

```
---message from hinit---mf6, mt 17 does not give recoil za= 99253  
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

```
---message from hinit---mf6, mt 37 does not give recoil za= 99252  
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

```
---message from hinit---mf6, mt 51 does not give recoil za= 99255  
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

```
---message from hinit---mf6, mt 52 does not give recoil za= 99255  
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)

```
---message from hinit---mf6, mt 91 does not give recoil za= 99255  
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)

```
---message from hinit---mf6, mt102 does not give recoil za= 99256  
photon momentum recoil used.
```

11. Evaluation has no resonance parameters given
purr...probabalistic unresolved calculation (0): No RR

```
---message from purr---mat 9916 has no resonance parameters
copy as is to nout
```

12. The number of coefficients was too large in a covariance
covr...process covariance data (1): Cov: Too many coeff.

```
---message from matshd--- 160 coefficients > 2
reset and continue
```

- **xsectplotter Errors:**

1. ENDF format insists that all outgoing fission neutrons, delayed or otherwise, have spectra. For delayed neutrons this is tough.
(Error # 2): No delayed n dist

```
WARNING: More than one delayed fission neutron decay time but no MF = 5 data
```